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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/761,765	01/18/2001	Charles Anderson	3633-501	5931

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EXAMINER	
PIZIALI, ANDREW T	
ART UNIT	PAPER NUMBER
1771	

DATE MAILED: 04/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/761,765	ANDERSON ET AL.	
	Examiner	Art Unit	
	Andrew T Piziali	1771	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 February 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *26-28,31-34 and 38-50* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *26-28,31-34 and 38-50* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *18 January 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. The amendment filed on 2/22/2005 has been entered. Applicant's amendment necessitated the new grounds of rejection presented in this Office action.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claim 34 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim contains subject matter that was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention. The specification does not teach or suggest a transparent substrate comprising a trilayer while also possessing the claimed formula. The specification discloses that at least one of the high refractive index layers may comprise the claimed trilayer, but that at least one of the remaining high layers is a single layer (see page 4, lines 7-8, page 7, line 14 through page 8, line 10, and Example 6).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 26-28, 31, 34, 38-39, 44-45 and 48-50 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 5,105,310 to Dickey.

Regarding claims 26-28, 31, 34, 38-39, 44-45 and 48-50, Dickey discloses a transparent substrate having at least one surface comprising an antireflection coating comprising a multilayer stack having alternating layers of high and low refractive indices comprising at least one high-index thin multilayer having a refractive index value higher than 1.9 and lower than 2.45, comprising one titanium oxide layer and one tin oxide layer, and at least one low-index layer having a refractive index from 1.30 to 1.65 (see entire document including column 6, lines 1-44 and column 8, lines 2-12).

Dickey does not specifically mention the claimed trilayer, but Dickey clearly discloses that the crux of the invention is that one skilled in the art can achieve deposition rates ten to fifteen times higher by depositing substitute materials, such as tin oxide, for a portion of a titanium dioxide layer (column 8, lines 2-12). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use any combination of titanium oxide layer(s) and tin oxide layer(s) to form the multilayer, because the substitution of tin oxide for titanium dioxide allows for increased deposition rates while still achieving acceptable performance.

Regarding claim 27, Dickey does not mention a specific refractive index range for the multilayer, but Dickey does disclose that the different refractive index values may be achieved by changing the thickness of one or more of the layers (column 6, lines 44-59). Dickey also discloses that although the optical performance of the article may be comparable to slightly inferior to some prior art systems, the advantage is the higher rate of deposition (paragraph

bridging columns 7 and 8). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to vary the thicknesses of the layers of the multilayer to result in the desired balance of optical performance and deposition rate, because it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art.

Regarding claim 28, Dickey discloses that the multilayer stack may comprise dielectric materials such as titanium oxide and tin oxide (column 6, lines 37-43 and column 8, lines 2-12).

Regarding claim 31, Dickey discloses that the low refractive index thin layers may comprise silicon oxide (column 6, lines 37-43).

Regarding claim 34, Dickey discloses that the antireflection coating may have a formula (high-index layer multilayer/low-index layer)n, wherein n is 2 or 3 (column 10, lines 21-29).

Regarding claim 38, Dickey discloses that the transparent substrate may comprise a high index layer distinct from the claimed high-index multilayer, having a refractive index of between 1.9 and 2.2 which comprises zirconium oxide, tin oxide, or zinc oxide (column 3, lines 37-44 and column 10, lines 21-29).

Regarding claims 39, 44-45, and 48-50, Dickey discloses that the transparent substrate may be used as an architectural or automobile glazing on glass (column 1, lines 6-9 and column 2, lines 28-36).

Regarding claim 50, considering that Dickey discloses that the transparent substrate may be used as an automobile glazing, and considering that automobile glazings are necessarily bent and/or toughened to pass automobile safety standards, it appears that Dickey teaches or strongly suggests toughening and/or bending the transparent substrate.

6. Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 5,105,310 to Dickey as applied to claims 26-28, 31, 34, 38-39, 44-45 and 48-50 above, and further in view of either USPN 5,332,618 to Austin or USPN 5,719,705 to Machol.

Dickey discloses that the low refractive index thin layers may comprise silicon oxide (column 6, lines 37-43), but Dickey does not specifically mention the use of halogenated oxides. Austin (column 8, line 46 through column 9, line 15) and Machol (column 4, lines 46-65) each disclose that it is known in the art to use silicon oxide and/or aluminum oxyfluoride as a low refractive index material in an alternating high/low/high/low transparent substrate. It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the low refractive index layers from any suitable low refractive index material, such as silicon oxide and/or aluminum oxyfluoride, because it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability.

7. Claims 33 and 39-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 5,105,310 to Dickey as applied to claims 26-28, 31, 34, 38-39, 44-45 and 48-50 above, and further in view of USPN 5,073,451 to Iida.

Regarding claim 33, Dickey does not specifically mention using a mixture of SiO_2 and Al_2O_3 for the low refractive index layers, but Iida discloses that it is known in the art to make low refractive index layers out of a mixture of SiO_2 and $Al2O_3$ (column 7, lines 1-23). It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the low refractive index layers from any suitable low refractive index material, such as a mixture of SiO_2 and Al_2O_3, because it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability.

Iida does not specifically mention any specific atomic ratios. It would have been obvious to one having ordinary skill in the art at the time the invention was made to vary the atomic ratio of SiO_2 and $Al2O_3$, because it is understood by one of ordinary skill in the art that the atomic ratio determines properties such as the refractive index of the material and because it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art.

Regarding claims 39-46, Dickey does not appear to mention the claimed additional layers, but Iida discloses that a 4-layer high-low-high-low glass article may further include silver films (mirror films) and thereby exhibit electromagnetic shielding effects (column 6, lines 1-9). Iida also discloses that such a multilayer coating may be used as a vehicle windshield or a rear window glass by lamination with an uncoated transparent glass plate using any suitable plastic interlayer such as polyvinyl butryal (column 4, lines 4-53). It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the antireflection coating of Dickey include one or more silver films and/or any suitable plastic interlayer, because the article could then exhibit electromagnetic shielding effects and/or could be used as a vehicle windshield or a rear window glass.

Regarding claim 41, Dickey does not appear to mention extra-clear glass or solid-tinted glass, but Iida discloses that the glass plate of a 4-layer high-low-high-low glass article may be either colorless or colored and that the glass may be curved (column 5, lines 44-56). It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the glass of Tatsuo colorless, colored and/or curved, because the material selection

depends on the intended application and because it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability.

8. Claims 39-40, 44 and 46-47 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 5,105,310 to Dickey as applied to claims 26-28, 31, 34, 38-39, 44-45 and 48-50 above, and further in view of USPN 5,981,059 to Bright et al. (hereinafter referred to as Bright).

Dickey does not appear to specifically mention using the transparent substrate as a mirror or on a display screen, but Bright discloses that it is known in the antireflection art to use an antireflection glazing as a mirror or on a display screen (see entire document including column 1, lines 12-30, column 3, lines 24-38 and column 7, lies 49-63). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the antireflection glazing as a mirror or on a display screen, because some mirror or display screen applications desire antireflection properties.

Response to Arguments

9. Applicant's arguments have been considered but are moot in view of the new grounds of rejection.

Regarding the results highlighted on page 14, line 18 through page 15, line 10 of the specification, the results are a direct effect of reducing the refractive index of at least one of the titanium dioxide layers (see page 3, lines 6-12 of the specification). Considering that Dickey specifically discloses this operation, regardless of whether the results are newly discovered, Dickey reads on the current claims.

Discovery of a new property or use of previously known composition, even if unobvious from the prior art, cannot impart patentability to claims to known composition, *In re Spada*, 15 USPQ2d 1655 (Court of Appeals, Federal Circuit 1990).

Conclusion

10. Applicant's amendment necessitated the new grounds of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew T Piziali whose telephone number is (571) 272-1541. The examiner can normally be reached on Monday-Friday (8:00-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on (571) 272-1478. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

atp

3/20/05

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